

Abstract

The present invention relates to a multifunctional compound, produceable in a mammalian host cell as a secretable and fully functional heterodimer of two polypeptide chains, wherein one of said polypeptide chains comprises, as the only constant region domain of an immunoglobulin heavy chain the C_H1-domain and the other polypeptide chain comprises the constant C_L-domain of an immunoglobulin light chain, wherein said polypeptide chains further comprise, fused to said constant region domains at least two (poly)peptides having different receptor or ligand functions, wherein further at least two of said different (poly)peptides lack an intrinsic affinity for one another and wherein said polypeptide chains are linked via said constant domains. Preferably, said domains, having receptor or ligand function, are in the format of a scFv-fragment and/or are immuno-modulating effector molecules. Most preferably, said scFv-fragment comprise the V_H and the V_L regions of the murine anti 17-1A antibody M79, the V_H and the V_L regions of the anti-Lewis Y antibody, as shown in Fig. 6, or the V_H and the V_L regions of the anti-CD3 antibody TR66 and/or said immuno-modulating effector molecule comprises cytokines or chemokines. Furthermore, the present invention relates to polynucleotides encoding said polypeptide chains as well as vectors comprising said polynucleotides and host cells transformed therewith as well as the use of the above embodiments for the production of said multifunctional compounds. In addition, pharmaceutical and diagnostic compositions are provided, comprising any of the afore-described multifunctional compounds, polynucleotides or vectors. Described is also the use of the afore-mentioned multifunctional compound for preventing and/or treating malignant cell growth, related to malignancies of hemapoietic cells or to solid tumors.